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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/390,051 09/03/99 HEDRICK

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EXAMINER

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NGUYEN, F
ART UNIT

PAPER NUMBER

2674
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/390,051

Applicant(s)
GEOFFREY HEDRICK ET AL.

Examiner
FRANCIS NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 13-18 is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Claim Objections

1. Claims 1, 11, 13 are objected to because of the following informalities: misleading phrase "said other color" (page 20, claim 1, line 25) instead of phrase "said another color" , running sentence (page 21, claim 11, lines 1-2) that could be improved by moving the phrase "simulated aircraft instruments" right after word "displaying" (page 21, claim 11, line 1), by substituting the 2nd word "in" (page 21, claim 11, line 1) with "of" for consistency with claim 1, misleading phrase "said other color" (page 23, claim 13, line 22) instead of phrase "said another color", improper phrase " the aircraft systems" (page 23, claim 13, line 23) that could be corrected as "said aircraft instruments" . Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities: misspelled word "mulitplexing" (page 11, line 3).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the

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subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tham et al. (U.S. Patent 5,912,656).

5. As to **claim 11**, Tham et al. discloses a color flat panel display (column 4, lines 46-48) for displaying not only patient critical medical data related to a variety of medical monitoring instruments, to a medical staff but also indicia for indicating that said data is received (column 6, lines 49-65), comprising:

a display screen (**display device 109** as shown in figure 1) having a periphery on which the data (**index 601 for cardiac output, relaxation index 607** in figure 6) gathered from **monitoring instruments 101/102** (as shown in figure 1) can be displayed in a first color (column 6, lines 54-57) and said indicia can be displayed in a second color different from said first color (column 4, lines 9-12, **color fading over time** , column 4, lines 29-32 , column 6, lines 40-41, **different color than the first one**, column 6, lines 57-63 column 5, lines 6-11) and on which a condition of data error can be detected by a medical staff when the monitoring system that feed the data related to the monitoring instruments to the display screen for display do not function properly (**visual warning in case monitored data is incorrect or unreliable**, column 9, lines 1-3, also **audio warning is another option detected by medical staff**). Note that Tham et al. discloses color meaning (**red is bad, yellow is moderate, green is good**, column 8, lines 30-35).

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a bezel surrounding the periphery of the display screen for holding the display screen in a fixed position (**display device 109 inherently has a bezel as part of display housing in order to provide structural support to display screen**) ; and

an input device for accessing an external memory device (**user input device 119, column 4, lines 53-58, accessing data storage 115** as shown in figure 1, column 3, lines 54-61) containing data necessary for medical application (data files 116 through 117, column 3, lines 49-54).

Tham et al. fails to expressly teach displaying aircraft system parameters related to simulated aircraft instruments; however, **Tham et al. does suggest application of invention in an aerospace environment** (column 2, lines 46-52). Note that problem to be solved (in terms of meaningful data presentation on display) is similar; **aircraft system parameters and patient biomedical parameters have several common factors, since they both need keen attention of responsible personnel during monitoring of displayed information so they can act on very quickly, also historical and present data sets are extremely necessary for assessment and immediate decision-making. It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the apparatus of Tham et al., then implement the apparatus in an aerospace situation , as suggested by Tham et al., by replacing the data sets related to medical instruments which monitor patient biomedical condition with the data sets related to aircraft instruments which monitor aircraft sytem parameters (hardware architecture setup is very similar since function of processing data and color presentation of meaningful data is similar in both cases, as to color indicia), to obtain the modified apparatus Tham et al.,**

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because it would result in immediate grasp of flight hardware health status (operator immediately viewing flight system health status shown in one screen , note Tham et al. teaches the user benefit gained in monitoring applications in column 9, lines 5-10), thus immediate and accurate decision-making by flight crew, which help to comply to system safety, reliability, man-machine interface.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tham et al. in view of Frisch et al. (U.S. Patent 5,854,625).

7. As to **claim 12**, note the same citation for claim 11. Tham et al. discloses user input device 119 as shown in figure 1 but fails to expressly teach a capacitive touch pad as input device. Frisch et al. specifically discloses a capacitive touch pad as input device (**force sensitive touch pad 10** as shown in figure 1, column 4, lines 48-50, column 5, lines 25-34). Note that Frisch et al. teaches a thin input device with high accuracy (column 3, lines 15-16, lines 24-28 , also figure 1 showing its geometric shape similar to a display screen , having a frame 54 including bezel 56, column 10, lines 66-67); it makes sense to utilize this device in an aircraft cockpit environment where hardware design drivers are typically weight, size and performance. **It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the modified apparatus Tham et al. , then specifically substitute the input device 119 with the aforementioned capacitive touch pad, as taught by Frisch et al. (since the cursor control function, input function remain the same), overlaying it on to display device 109, to obtain the combined modified apparatus Tham et al., further modified by Frisch et al., because it would result in**

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space saving (no space needed for mouse/mousepad, joystick) , immediate input to computer with accuracy for access to database stored in aforementioned data storage 115, in case of system malfunction detected and flagged on display device 109.

Allowable Subject Matter

8. Claims 1-10, 13-18 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter, as to claims 1-10: **none of prior art discloses** a flat panel display system for displaying data relating to aircraft system parameters from corresponding aircraft instruments to a flight crew in a cockpit of an aircraft, comprising a flat panel display for visually displaying the aircraft system parameters and for displaying indicia, a first central processor, a first graphics generator coupled to the first central processor for generating a first set of color data as a function of the data received by the first central processor and for outputting the first set of color data to the flat panel display, **a second central processor, a second graphics generator coupled to the second central processor** for generating a second set of color data as function of the data received by the second central processor and for outputting the second set of color data to said flat panel display in a different color than said first set of color data. Note the claim 1 objection above.

The following is a statement of reasons for the indication of allowable subject matter, as to **claims 13-18: none of prior art discloses** a circuit for controlling a flat panel display that displays data

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relating to aircraft system parameters gathered from aircraft instruments and indicia showing that said data is being received by the flat panel display, comprising a first central processor, a first graphics generator coupled to the first central processor for generating a first set of color data as a function of the data received by the first central processor and for outputting the first set of color data to the flat panel display, **a second central processor, a second graphics generator coupled to the second central processor** for generating a second set of color data as function of the data received by the second central processor and for outputting the second set of color data to said flat panel display in a different color than said first set of color data, **and a third central processor for receiving data from aircraft instruments and for interrogating said aircraft instruments with simulated flight data for maintenance and diagnostic purposes.** Note the claim 13 objection above.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No.	4,598,292	Devino
U.S. Patent No.	3,678,256	Harenberg, Jr.
U.S. Patent No.	5,001,638	Zimmerman et al.
U.S. Patent No.	5,616,030	Watson
U.S. Patent No.	4,599,070	Hladky et al.
U.S. Patent No.	4,842,520	Dupont

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U.S. Patent No.	5,959,615	Yamade et al.
U.S. Patent No.	5,988,902	Holehan
U.S. Patent No.	5,260,874	Berner et al.
U.S. Patent No.	5,224,861	Glass et al.
U.S. Patent No.	4,740,779	Cleary et al.
U.S. Patent No.	5,467,271	Abel et al.

Reference Devino is made of record as it discloses an electronic standby flight instrument continuously providing aircraft sytem parameters to a display.

Reference Harenberg, Jr. is made of record as it discloses a performance and failure assessment monitor assessing overall performance of automatic landing for an aircraft.

Reference Zimmerman et al. is made of record as it discloses an integrated air data system comprising a plurality of redundant aircraft instruments providing aircraft instrument parameters. to ensure safety of the aircraft.

Reference Watson is made of record as it discloses a flight simulator comprising a simulated aircraft cockpit, utilizing an actual aircraft.

Reference Hladky et al. is made of record as it discloses an aircraft simulator and simulated flight control system providing aircraft system parameters.

Reference Dupont is made of record as it discloses a simulator of a command cockpit of an aircraft adapted for training.

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Reference Yamade et al. is made of record as it discloses an information processing device wherein a color bargraph on display can change color in order to recognize a scheduled item.

Reference Holehan is made of record as it discloses a computer comprising a capacitive touchpad as input device.

Reference Berner et al. is made of record as it discloses an aircraft flight emulation test system providing aircraft system parameters from a plurality of monitoring instruments.

Reference Glass et al. is made of record as it discloses a training device onboard instruction station comprising flat panel displays with bezels.

Reference Cleary et al. is made of record as it discloses an aircraft panoramic display comprising a plurality of tiled flat panel displays.

Reference Abel et al. is made of record as it discloses an air-based station comprising a microprocessor, a display, and aircraft instruments for navigation/position system.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis Nguyen whose telephone number is (703) 308-8858. The examiner can normally be reached on weekdays from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709. The fax phone number for this Group is (703) 872-9314.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

A handwritten signature in black ink, appearing to read 'Francis Nguyen', with a long, sweeping horizontal stroke extending to the right.

Francis Nguyen

June 14th, 2001